Harris offers a portfolio of steerable spot beam antenna system configurations for K/Ka-band communications that meet the need for minimal scan loss at larger scan angles, highly localized coverage, and mission flexibility.

**ANTENNA SYSTEMS FOR BROADER APPLICATIONS AND GREATER COVERAGE**

**BENEFITS**

- Accommodates changing mission needs through steerable spot beams
- Reduces program risk and schedule through in-house design, manufacturing, and testing
- Minimizes scan loss at larger scan angles
- Reduces feed array volume while reducing line losses through state-of-the-art feed network packaging

**HIGH-PERFORMANCE ANTENNAS FROM A TRUSTED PARTNER**

A leading supplier of spaceborne antenna systems, Harris offers customers 15 years of experience in the development of fixed and steerable spot beam antenna solutions for government and commercial programs. Our demonstrated expertise in design, analysis, integration, and testing of these solutions offers the benefit of a low-risk and on-time delivery of high-performance antennas.

Today, our fixed and steerable spot beam antenna systems consistently meet or exceed customer specifications for K/Ka-band communications.

We offer our customers a single-feed single reflector, steerable over field of view, and a multifeed single reflector with fixed spot beams, which allows steering for small corrections as needed.

Harris also offers a combined single-feed single-reflector and multifeed single-reflector solution. This combination allows for dual commercial and military Ka-band capabilities and provides flexibility for changing markets or military hot spots.
Harris Corporation is a leading technology innovator, solving customers' toughest mission-critical challenges by providing solutions that connect, inform and protect. Harris supports government and commercial customers in more than 100 countries and has approximately $6 billion in annual revenue. The company is organized into three business segments: Communication Systems, Space and Intelligence Systems and Electronic Systems. Learn more at harris.com.

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Design
Harris employs the capabilities of numerous modern computer-aided design and analysis tools in the antenna design process. We use software programs such as GRASP, CHAMP, and POS from the TICRA analysis suite, along with Ansoft’s High Frequency Structure Simulator and Matlab in the development and analysis of our products. Additionally, we utilize proprietary tools that incorporate techniques such as methods of moments, finite element models, and Finite-Difference Time-Domain during the design process. The combination of commercial and internally developed tools allows us to quickly trade and develop antenna designs for specific regional coverage requirements, which reduces time to market for our customers.

Manufacturing and Testing
Harris’ extensive manufacturing and testing facilities provide end-to-end capabilities in the design, manufacture, and testing of a wide variety of sophisticated antenna systems. In-house test facilities consist of multiple automated indoor and outdoor antenna ranges, PIM test chambers, and automated RF test stations, which use network analyzers, spectrum analyzers, and signal generators.

Indoor facilities such as our PIM-free antenna facility, as well as planar and spherical near-field antenna test ranges use compact range and near-field techniques to measure large antenna apertures in controlled environments.

Testing Capabilities
- High-speed automated antenna testing
- Automated near-field pattern testing (planar and spherical)
- Automated far-field pattern testing
- Large-scale (up to 15 meters) and localized PIM testing
- Radar cross-section prototype test capability
- High-frequency through extreme high-frequency test capability

Facilities and Equipment
- Numerous antenna prototyping facilities
- Component-level thermal PIM chamber
- Three 2-meter diameter quiet zone compact ranges
- Four large indoor anechoic chambers
- Multiple outdoor ranges
- Two near-field scanner facilities
  - Planar – 3.6 meter by 3.6 meter (12 feet x 12 feet)
  - Spherical – 6.1 meter (20 feet) diameter
- RF test facility
  - Capability for reflectors up to 12 meters in diameter
  - Near-field range
  - PIM test certified
- Commercial clean room and high-bay
  - 65,000 square-foot high-bay space
  - Class 283K clean room
  - Temperature and humidity controlled
  - 5 meter to 22 meter antenna testing capabilities

Facts
Harris has extensive experience developing fixed and steerable spot beam antennas for government and commercial customers.

Harris has delivered over 60 solid reflectors and over 200 associated feeds with excellent on-orbit performance.

Harris has over 65,000 square feet of production floor space dedicated to space structures.

More than 250 engineers and technicians support Harris’s space antenna business.